



Description

INTERSECTED CONE-SHAPED AIR FILTER FOR AN AUTOMOTIVE
INTERNAL COMBUSTION ENGINE

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Cross-Reference to Related Application

This application claims priority of International
application number PCT/IB00/00852 filed June 26, 2000.

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Technical Field of Invention

This invention relates to an air filter, particularly an
intersected cone-shaped air filter that can focus airflow into
15 an ~~automotive~~automotive internal combustion engine.

Background of Invention

Current automotive technology needs automotive engines of
20 high performance. ~~A highly performed~~High performance
~~automotive engine requires that~~engines require fuel ~~must to be~~
proportionately mixed with clean air and the mixture produced
~~can to~~can quickly reach the internal combustion ~~charge chamber.~~

There are two options for the accomplishment of the
25 conditions cited above. The first is to minimize fluid friction,
and the second ~~one~~ is to exert a driving force on the mixture.
~~It~~Such can be performed only by designing appropriately the
aerodynamic construction of the air filter.—

The object of this invention is thus to provide an air
30 filter wherein a driving force is ~~performed~~provided due to the
focusing of the airflow on the midmost streamline. Based on its
shape, i.e., intersected cone, an embodiment of the air filter

is referred to as CYCLO FILTER.

Brief Description of the Invention

5 This intersected cone-shaped air filter is designed for the purpose of filtering the air flowing into an automotive internal combustion engine and focusing it to the midmost streamline. Due to its intersected conical shape, the effective area of this air filter's cylindrical surface is advantegously larger than that
10 of previously adapted filters.

 The larger the effective area of ~~this~~ the air filter's cylindrical surface is, the more the mass of the air-fuel mixture that will flow into the combustion chamber. ~~And the~~ The resulting driving force ~~resulted in~~ is due to the focusing of air
15 flow on the midmost streamline and will increase the velocity and the mass of the air-fuel mixture within the combustion chamber. ~~Consequently, it will be generated by the automotive engine.~~

20 Brief Description of the Drawing

 Figure 1a is a perspective view of the air filter ~~presently invented~~ in accordance with an embodiment of the present invention, showing a body being partially opened.

25 Figure 1b is a longitudinal cross section along line A-A of the embodiment. ~~in~~ as shown in Figure 1a.

 Figure 2a is a perspective view of ~~the modification~~ a further embodiment of the air filter ~~presently invented~~ in accordance with the present invention, showing a body being
30 partially opened.

 Figure 2b is a longitudinal cross section along line A'-A' of the ~~embodiment in~~ embodiment as shown in Figure 2a.

Figure 3 is a schematic diagram showing the path of the airflow from the atmosphere into an automotive internal combustion engine.

5 Detailed Description of the Invention

~~Figure~~Figures 1a and 1b show a basic construction of an intersected cone-shaped air filter (1) comprising a hollow body (2) of specified thickness the side of which dips ~~downwardly~~inwardly at angle $\phi = 2^\circ$ to 7° with respect to the vertical axis. The filter body is made up of symmetric longitudinally folded filter paper materials whose thickness governs the thickness of ~~the~~ air filter body (2).

~~A clamping~~Clamping ring (3) is fixedly disposed along the outer periphery ~~of the~~at upper end 3a and ~~the lower end~~end 3b of ~~the~~ filter body (2) for strengthening the filter body construction.

~~Figure~~Figures 2a and 2b show ~~the one of the modifications~~an embodiment modification of the cone-shaped air filter, which ~~have specifies~~a specific hollow body (2'). The outer wall body of the air filter shape is cylindrical and the inner wall body of the air filter shape is an intersected cone.

Figure 3 is a schematic diagram showing the path of the air flow from the atmosphere into an automotive internal combustion engine. Air from the atmosphere is directed to ~~an~~ air filter (I) through the air filter body. Owing to the shape of the filter, the air flows through the centre of the smaller end of the filter into ~~the~~ mixing chamber (II). The air and fuel which have become an air-fuel mixture after entering the mixing chamber, flows further into ~~the~~ combustion engine (III). The resulting driving force ~~resulted in~~ is due to the focusing of

the airflow on the centre of the smaller end of the filter and will increase the velocity and the mass of the air-fuel mixture within the combustion chamber.

5 The preferred embodiments described within this specification are intended only for illustration, not to limit the scope of invention. ~~Modification of any kind is always~~ Modifications of various kinds are possible for them those skilled in the art ~~as long as it is~~ while remaining still within the scope of invention and ~~claim.~~ as claimed.

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